

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A wireless communication unit ~~(300)~~ comprising a linearised transmitter ~~(325)~~ having:
 - a forward path for routing a signal to be transmitted;
 - a power amplifier ~~(324)~~ for transmitting a linearised radio signal;
 - a feedback loop, operably coupled to the power amplifier ~~(324)~~ and the forward path, comprising a loop adjustment function ~~(442)~~, wherein the forward path and feedback loop comprise quadrature circuits; and
 - a processor ~~(322)~~ for applying a first training signal to a first quadrature circuit loop for routing through the forward path, power amplifier and feedback path to determine at least one first parameter setting of the loop adjustment function ~~(442)~~, wherein
~~the wireless communication unit (200) characterised by:~~
 - said processor ~~(322)~~ applying a second training signal to a second quadrature circuit loop to determine at least one second parameter setting of the loop adjustment function ~~(442)~~.
2. (currently amended) The wireless communication unit ~~(200)~~ according to Claim 1, wherein ~~the wireless communication unit (200) is further characterised by~~ said first training signal and said second training signal ~~having~~have substantially the same signal parameters, ~~for example where they are phase training signals.~~
3. (currently amended) The wireless communication unit ~~(200)~~ according to Claim 2, wherein ~~further characterised by~~ the loop adjustment function is~~being~~ a phase shifter ~~(442)~~ for adjusting a phase shift in the first and second quadrature circuit loops.
4. (currently amended) The wireless communication unit ~~(300)~~ according to Claim 3, ~~wherein the wireless communication unit (300) is further~~ comprising~~characterised by~~ a phase calculation function ~~(460)~~, operably coupled to said phase shifter ~~(442)~~, to calculate a phase shift

in each of the first and second quadrature circuit loops, thereby ascertaining an imbalance therebetween.

5. (currently amended) The wireless communication unit ~~(300)~~ according to ~~any preceding Claim~~ Claim 1, wherein ~~the wireless communication unit (300) is further characterised by said processor (322) applying~~ applies said first training signal to the linearised transmitter prior to applying said second training signal.

6. (currently amended) The wireless communication unit ~~(300)~~ according to ~~any preceding Claim~~ Claim 1, ~~further characterised by wherein~~ wherein the linearised transmitter ~~is being~~ is a Cartesian feedback linearised transmitter such that said adjustment is applied to a real-time feedback loop.

7. (currently amended) The wireless communication unit ~~(300)~~ according to ~~any preceding Claim~~ Claim 1, wherein said wireless communication unit is capable of operation on a TETRA communication system.

8. (currently amended) The wireless communication unit ~~(300)~~ according to ~~any preceding Claim~~ Claim 1, wherein said wireless communication unit is a subscriber unit or a base transceiver station.

9. (currently amended) A linearised transmitter integrated circuit ~~(320)~~ comprising:
a linearised transmitter for transmitting a linearised radio signal, and
a forward path comprising quadrature circuits for routing a signal to be transmitted and for operable coupling to a power amplifier ~~(324)~~ for transmitting a linearised radio signal;
a feedback loop, operably coupled to the forward path and for operable coupling to an output of a power amplifier ~~(324)~~, wherein the feedback loop comprises a loop adjustment function ~~(460)~~, and quadrature circuits; and
a processor ~~(322)~~, operably coupled to the feedback loop for applying a first training signal to a first quadrature circuit loop in the linear transmitter integrated circuit to be routed

through the forward path, power amplifier (324) and feedback path to determine at least one first parameter setting of the loop adjustment function (460),

~~wherein the linearised transmitter integrated circuit (320) characterised by:~~ said processor (322) ~~applying~~ applies a second training signal to a second quadrature circuit loop in the linear transmitter integrated circuit to determine at least one second parameter setting of the loop adjustment function (460).

10. (currently amended) A method of training a linearised transmitter (325) having a forward path, a power amplifier (324) and a feedback loop comprising a loop adjustment function, wherein the forward path and feedback loop comprise quadrature circuits; the method comprising the steps of:

applying a first training signal to be routed through a first quadrature circuit loop of the forward path, power amplifier and feedback path; and

determining at least one first parameter setting for the loop adjustment function based on the first training signal,

~~the method characterised by the steps of:~~

applying a second training signal to a second quadrature circuit loop of the forward path, power amplifier and feedback path; and

determining at least second parameter setting for the loop adjustment function based on the second training signal.

11. (currently amended) The method of training a linearised transmitter (325) according to Claim 10, the method further ~~characterised by the step of~~ comprising adjusting said loop adjustment function based on a determination made on the first training signal and a determination made on the second training signal.

12. (currently amended) ~~A storage medium storing processor implementable instructions or data adapted to perform the steps of method Claim 10 or Claim 11.~~ The method of training a linearised transmitter according to claim 10 wherein the steps are performed in a storage medium storing processor.